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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William K. S. Cleveland

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01/29/2010

THE LUBRIZOL CORPORATION
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EXAMINER

VASISTH, VISHAL V

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,248	Applicant(s) CLEVELAND ET AL.	
	Examiner VISHAL VASISTH	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10,12-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,12-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 12/16/2009 has been entered.

Response to Amendment

2. Applicants' amendments filed 12/16/2009 amended independent claims 1 and 16 and dependent claims 14 and 18. Applicants' amendments overcome the 35 USC 103 rejections over Blythe in view of Teacherson and Blythe set forth in office action mailed on 2/24/2009. Therefore, these rejections are withdrawn. New grounds of rejection necessitated by the amendments are set forth below.

Claim Objections

3. Claims 1 and 13-14 are objected to because of the following informalities:

Claim 1 recites the limitation, "wherein the amount of component (B)(1) present in the composition is 1.6 to 3.4 weight percent, and the combined amount of components (B)(1) and (B)(2) present in the composition is from "5.5 to 15 weight

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percent." Somewhere in the limitation it should mention that "the composition" referred to is "the lubricant composition."

Claim 13 has a "(3)" in the middle of the limitation which should not be there. Appropriate correction is required.

Claim 14 uses "comprising of" language in the alternative, which is incorrect. Alternative expressions are permitted if they present no uncertainty or ambiguity with respect to the question of scope or clarity of the claims. One acceptable form of alternative expression, which is commonly referred to as a Markush group, recites members as being "selected from the group consisting of A, B and C." See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925). See MPEP 2173.05(h). Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1, 3, 5-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blythe, US Patent No. 5,264,005 (hereinafter referred to as Blythe) in view of Patel et al., US Patent No. 5,741,764 (hereinafter referred to as Patel) further in view of Teacherson, US Patent Application Publication No. 2004/0083729 (hereinafter referred to as Teacherson).

Regarding claim 1, Blythe discloses a method comprising the steps of; introducing into a two-cycle internal combustion engine a major amount of a fuel lubricant mixture (see Abstract). Blythe discloses a lubricant composition and fuel-lubricant mixture (Col. 28/L. 16-18) wherein the lubricant composition are used in fuels in amounts to release stuck piston rings or increase compression. The lubricant composition is preferably used at a concentration of 4 ounces per gallon of fuel. Based on a conversion of 128 ounces is equal to 1 gallon the ratio of fuel to lubricant would be within the claimed range 10-250:1 (step (I) of claim 1) (Col. 28/L. 26-38).

The lubricant composition of Blythe comprises, a fluidizing oil such as natural or synthetic oils (component (A) of claim 1) (Col. 27/L. 63-64), the reaction product of isostearic acid and tetraethylenepentamine (component (B)(1) of claim 1) (Col. 22/L. 49-58), a Mannich dispersant which is the reaction product of polybutene-substituted phenol, formaldehyde and an aqueous dimethylamine solution (component (B)(2) of claim 1) (Col. 20-21/L. 29-6) and a Stoddard solvent having a kinematic viscosity of .74-1.65 (cSt) at 100°C (component (C) of claim 1) (Col. 30/L. 20-23).

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The lubricant composition of Blythe discloses comprising from about 2 to about 15% by weight of the product of a isostearic acid and tetraethylenepentamine (at least 1.6% by weight of component (B)(1) (Col. 22/L. 36-46 and Col. 28/L. 46-49) and from about 0.5 to about 30% by weight of a Mannich dispersant (component (B)(2) of claim 1) which makes the total weight percentage of the two components between 2.5 wt% to 45 wt% which overlaps with the claimed range of 6.5 to 15 wt% (Col. 16/L. 5 and Col. 28/L. 39-45 and Col. 30-31/L. 56-10).

Blythe discloses the use of additional additives in the fuel lubricant mixture but does not explicitly disclose the use of friction modifiers including glycerol monooleate.

Patel discloses a two-cycle lubricant comprising a liquid fuel-lubricant mixture comprising additives including dispersants and friction modifiers such as glycerol monooleate, glycerol dioleate and/or mixtures thereof (Col. 9-10/L. 59-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the friction modifiers of Patel in the composition of Blythe in order to enhance the friction-reducing properties of the composition (Col. 9/L. 59-60 of Patel).

The combination of Blythe/Patel further disclose the fuel lubricant mixture in power lawn mowers and other power-operated garden equipment, power chain saws, pumps, electric generators, marine outboard engines snowmobiles, motorcycles and the like (Col. 1/L. 11-17 of Blythe). Blythe/Patel do not, however, explicitly disclose the two-stroke internal combustion engine containing a power valve.

Teacherson discloses a two-stroke engine that produces more power with each stroke of the engine piston. Teacherson teaches lubricating the engine with a mixture of

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oil and gas (Para. [0031]). Teacherson further discloses a valve that closes when full power is needed allowing fuel to flow with the correct timing to develop the full power capability of the disclosed engine (power valve, of component (II) in claim 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the power valve of Teacherson in the two-stroke engine of Blythe/Patel in order to enhance the internal power generation of Blythe (Teacherson, Para. [0109]).

Regarding claim 2, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising tetraethylenepentamine (Col. 22/L. 49-58).

Regarding claim 3, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising tetraethylenepentamine (Col. 22/L. 49-58).

Regarding claim 5, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising a fluidizing oil such as natural or synthetic oils (Col. 27/L. 63-64).

Regarding claim 6, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising a natural or synthetic oil

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present in the lubricant composition from about 15% up to about 70% (Col. 28/L. 55-59) which overlaps with the claimed range of 30 to 95% by weight.

Regarding claim 7, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising isostearic acid and tetraethylenepentamine (monocarboxylic acylating agent is a C₄ to C₂₂ fatty carboxylic acid and the polyamine is a polyethylenepolyamine) (Col. 21/L. 37-41 and Col. 22/L. 49-58).

Regarding claim 8, Blythe/Patel/Teacherson disclose all of the limitations applied to claims 1 and 7 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising isostearic acid and tetraethylenepentamine (fatty carboxylic acid is isostearic acid and the polyamine is a polyethylenepolyamine) (Col. 21/L. 37-41 and Col. 22/L. 49-58).

Regarding claim 9, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising a hydrocarbyl substituted aminophenol wherein the hydrocarbyl substituent of the aminophenol can be derived from polyisobutene (hydrocarbyl substituent of the aminophenol is derived from polyisobutylene) (Col. 3/L. 18 and Col. 5/L. 30-38).

Regarding claim 10, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising a Mannich

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dispersant which is the reaction product of polybutene-substituted phenol, formaldehyde and an aqueous dimethylamine solution (Mannich dispersant is the reaction product of polyisobutylene, formaldehyde and a an amine) (Col. 20-21/L. 29-6).

Regarding claim 12, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising ester oils (solvent is an oxygen-containing composition) (Col. 30/L. 7-19).

Regarding claims 13 and 14, Blythe/Patel/Teacherson disclose all of the limitations applied to claim 1 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture comprising additional additives (as recited in claim 13) (Col. 28/L. 60-66) including, viscosity index improvers, oxidation-inhibiting agents and pour point depressants (as recited in claim 14) (Col. 28/L. 60-66), extreme pressure agents, antiwear agents, color stabilizers and anti-foam agents.

Claim Rejections - 35 USC § 103

6. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blythe in view of Patel.

Regarding claim 16, Blythe discloses a method comprising the steps of; introducing into a two-cycle internal combustion engine a major amount of a fuel lubricant mixture (see Abstract). Blythe discloses a lubricant composition and fuel-lubricant mixture (Col. 28/L. 16-18) wherein the lubricant composition of Blythe

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comprises, a fluidizing oil such as natural or synthetic oils (component (A) of claim 16) (Col. 27/L. 63-64), the reaction product of isostearic acid and tetraethylenepentamine (component (B)(1) of claim 16) (Col. 22/L. 49-58), a hydrocarbyl substituted aminophenol (component (B)(2) of claim 16) (Col. 20-21/L. 29-6) and a Stoddard solvent having a kinematic viscosity of .74-1.65 (cSt) at 100°C (component (C) of claim 16) (Col. 30/L. 20-23).

The lubricant composition of Blythe comprises from about 2 to about 15% by weight of the product of a isostearic acid and tetraethylenepentamine (component (B)(1) of claim 16) (Col. 22/L. 36-46 and Col. 28/L. 46-49) and the hydrocarbyl-substituted aminophenol dispersant (component (B)(2) of claim 16) is 5 to 30% by weight and which makes the total weight percentage of the two components being between 7 to 45 wt% which overlaps with the claimed range of from 6.5 to 15 weight percent (Col. 16/L. 5 and Col. 28/L. 39-45 and Col. 30-31/L. 56-10). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Blythe discloses the use of additional additives in the fuel lubricant mixture but does not explicitly disclose the use of friction modifiers including glycerol monooleate.

Patel discloses a two-cycle lubricant comprising a liquid fuel-lubricant mixture comprising additives including dispersants and friction modifiers such as glycerol monooleate, glycerol dioleate and/or mixtures thereof (Col. 9-10/L. 59-8). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the

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friction modifiers of Patel in the composition of Blythe in order to enhance the friction-reducing properties of the composition (Col. 9/L. 59-60 of Patel).

Regarding claim 17, Blythe/Patel disclose all of the limitations applied to claim 16 above, and Blythe further discloses a lubricant composition for two-cycle engines comprising isostearic acid and tetraethylenepentamine (monocarboxylic acylating agent is a C₄ to C₂₂ fatty carboxylic acid and the polyamine) (Col. 21/L. 37-41 and Col. 22/L. 49-58).

Regarding claim 18, Blythe/Patel disclose all of the limitations applied to claim 16 above, and Blythe further discloses a lubricant composition for two-cycle engines comprising additional additives including, viscosity index improvers, oxidation-inhibiting agents and pour point depressants, extreme pressure agents, antiwear agents, color stabilizers and anti-foam agents (Col. 28/L. 60-66).

Regarding claim 19, Blythe/Patel disclose all of the limitations applied to claim 16 above, and Blythe further discloses a lubricant composition for two-cycle engines comprising a major portion of a normally liquid fuel such as hydrocarbonaceous petroleum distillate fuel (a liquid fuel) (Col. 30/L. 20-23) and a lubricating amount of the composition described in claim 16 (lubricating amount of the composition of claim 16) (Col. 28/L. 16-59).

Regarding claim 20, Blythe/Patel disclose all of the limitations applied to claim 16 above, and Blythe further discloses a method of introducing into a two-cycle internal combustion engine a fuel-lubricant mixture (Col. 1-2/L. 64-27) such as the one

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in claim 16 (supplying to the engine the lubricant composition of claim 16) (Col. 28/L. 16-59).

Response to Arguments

7. Applicants' arguments filed 12/16/2009 regarding claims 1, 3, 5-10, 12-14 and 16-20 have been fully considered and are not persuasive.

Applicants argue that the amendments to independent claims 1 and 16 are sufficient to demonstrate that the claims are now commensurate in scope with the data from the specification and the data presented in the Declaration signed by Laimute Svarcas on 12/16/2009.

As a preliminary note it should be mentioned that some of the arithmetic is inaccurate from Table 1 of applicants' arguments. For example, Example No. 4 recites (B)(1) + (B)(2) is present in a concentration of 6.6 wt% when it is actually present in a concentration of 9.6 wt%. The same can be said regarding Examples No. 5 and 6 which should be present in a concentration of 7.05 and 9.4 respectively instead of the 8.35 and 7.4 respectively.

Regarding the comparative data supplied in the declaration signed by Mr. Laimute the comparative data clearly shows nothing unexpected for reasons discussed previously namely that the addition of more additive leads to better results. This is most clearly shown by the first subset of comparative data comparative formulations A, B, and D compared to example oil C. Example C does have the highest power valve rating and piston varnish rating and comparable ratings in the other categories, but

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Example C also has the highest concentration of (B)(1) + (B)(2) by 1.8 wt%. The same is true when comparing formulations E and F to G the example oil. Example G has 2 wt% greater concentration than the comparative formulations E and F and still shows a lower power rating than formulation F, the other formulation with component (B3).

Furthermore, the comparative formulations in many cases actually show better results than the example oils based on Table 2 of applicants' arguments. This is exemplified by comparative formulation J which has a power valve rating of 5 which is the highest for any formulation. Applicants' argue that this shows that the range recited in the instant claims are shown to provide unexpected results at least up to the ranges recited in the instant claims, because outside the range also shows unexpected results is not persuasive. Once again the formulation with the highest concentration of (B)(1) + (B)(2) has the highest power valve rating and is comparable in all other categories. Also, this further shows that there is no criticality in the ranges selected by applicant to recite in their claims.

Applicants did make narrowing amendments that are more indicative of the example oils from the instant specification, but applicants still have not shown unexpected results or at least criticality in the ranges.

Applicants should also narrow the independent claims with a concentration for the (B)(3) friction modifiers, limit the (B)(1) component to what is actually shown in the example oils which are isostearic acids reacted with polyethylene polyamine, compare the example oils from the specification and declarations to the closest prior art and

finally show the differences in criticality between the hydrocarbyl-substituted aminophenol dispersants and the Mannich dispersants.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VVV

/Glenn A Caldarola/
Acting SPE of Art Unit 1797